Campbell (H. 7)

Calculi Found in the Bladder after the Cure of Vesico-Vaginal Fistula

BY

HENRY F. CAMPBELL, M. D.

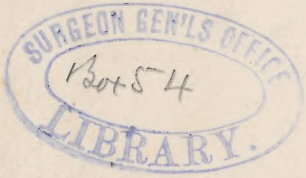
AUGUSTA, GEORGIA

REPRINT FROM VOLUME I

Gynecological Transactions

1876

Presented by the Author



With Compliments of

THE AUTHOR.

SURGEON GEN'LS OFF. LIBRARY.

ORIGIN AND HISTORY OF CALCULI FOUND IN THE BLADDER, AFTER THE CURE OF VESICO-VAGINAL FISTULA BY OPERATION.

BY HENRY F. CAMPBELL, M. D.,

Augusta, Georgia.

It will accord with the experience of not a few of those who operate for the relief of vesico-vaginal fistula, that a stone has occasionally been found in the bladder of their patients, at some time subsequent to the operation. This is by no means a common occurrence, nor, on the other hand, is it one without a goodly number of precedents.

Cases of vesico-vaginal fistula, in which such calculi have afterwards been found, cannot, so far as my observation extends, be said to differ in any of their obvious characteristics from ordinary cases of women laboring under the distresses attending this serious accident of parturition; the constant flow of urine, the excoriations and abrasions of the genitals and surrounding parts are alike in both cases, and of course in the bladder itself there is the same diminished capacity that has marked all the cases of such fistulæ in the previous experience of the surgeon.

These cases, like all others, are operated upon, and when cured by the closure of the fistula, are, after careful examination, dismissed by the surgeon, he indulging in the reflection that all anxiety in regard to them, and especially all operative procedures are at an end, so far at least as he is concerned. From this period — perhaps for some months — no particular difference in their progress can be observed, even when they remain under the immediate care of the surgeon. It must be recollected that frequent micturition,

and an incapacity to retain the normal amount of urine, marks, more or less prominently, the convalescence of almost every patient in whom the fistula has existed for any considerable time previous to the operation. Scarcely any woman finds herself at once restored by the operation to her normal power of retention. It is only after the lapse of a considerable period, and after the bladder has regained the full amplitude which it has lost by the contraction consequent upon the long drainage through the fistula, that we can expect the patient to retain her urine for the normal period. One of my patients, after a successful operation, insisted that she had not been cured, because she found her bed deluged with urine every morning, as had been the case for a long time previous to the operation. This woman had had the fistula for years, and her bladder had very little or no capacity, being but little larger than a moderate sized lemon. After the cure, she urinated very frequently throughout the day. At night, though there was no unusual irritability, the organ could not contain the urine entering by the ureters for sheer want of capacity. It was filled and emptied, probably many times, during the night without waking her. By advising her to retain the urine, even though it gave her some pain, for a longer and longer interval during the day, the bladder gradually regained its tolerance and capacity, and she soon ceased to wet her bed.

Cases of this general character I suppose to be by no means uncommon ; they give little or no uneasiness, for the symptoms decrease from day to day, and the bladder soon becomes normal in its power of retention. But there are certain other cases in which the symptoms of vesical irritation and of limited capacity to retain the urine, are either more marked than common, or their duration is unusually protracted. This is the class of cases in which, on examination, we sometimes encounter, either at the neck of the bladder or in the *bas fond*, a calculus of considerable size. Though perhaps not very recently examined, still the period had not been very long passed when the examinations had been of daily occurrence. Yet, with all the repeated intro-

ductions of the catheter during the treatment, the calculus had never been encountered, or its existence even suspected.

This brings us directly to the question which it is the object of the present paper to discuss, namely, What is the date, the origin, and the history, of a calculus which is found in the bladder of a woman recently cured of vesico-vaginal fistula?

The limited liability of the female to vesical calculus, in comparison with the male, has been variously accounted for. The less frequent exposure of women to the causes that produce spontaneous nuclei, which are in five sixths of the cases composed of uric acid, has been frequently assigned as greatly lessening their liability; but the facility of early expulsion from the bladder, on account of the shortness, directness, and dilatability of the urethra, is more frequently, and far more plausibly dwelt upon. I am inclined to believe, from my own observation, that women are but little less liable to the production of uric acid concretions than men; and further, there are many circumstances in the history of multiple calculi in men, which make it highly probable that the production and passing off of spontaneous nuclei is far more common in them, than is generally recognized. It is well known that many of the most remarkable cases of this multiple variety would probably never have been detected, but for the existence of some obstruction — preputial, urethral, or prostatic — in the excretory passages, preventing the ready expulsion of the uric acid nuclei generated in the secretory portions of the urinary apparatus. It is probable, then, that it is the facility of expulsion of these calculi, rather than their non-production in woman, that renders her less frequently the subject of operations for the removal of stone than man. In the vast majority of instances, — even in men, I believe, but especially in women, — the minuter idiogenic calculi do not remain sufficiently long in the bladder to become the centres of calculous accretion to such an extent as to secure their permanent detention. In my experience, embracing over fifty cases of lithotomy, but five of the patients were females, and in one of them a for

eign nucleus of considerable size — a quartz pebble — had been forcibly pushed into the bladder through the urethra.

Notwithstanding their infrequent occurrence, owing to the conditions above referred to as unfavorable to the production of vesical calculus in the female, it is well known that "the calculous diathesis," as it is called, — whether of the uric acid or of the phosphatic variety, — is often found in this sex. The records of lithology are crowded with curious cases illustrative of the fact, that foreign bodies introduced into the bladder of the female are capable of modifying, by reflex irritation, the action of the secretory portion of the urinary organs, to an extent equal to their effect upon the male; and that in them, calculous incrustations form upon such bodies, quite as rapidly and as frequently as in men.

The peculiarities of the female urinary organs secure to the sex, as we have seen, a comparative immunity from vesical calculus. The presence of a considerable stone in the bladder of a parturient female, obviously could not fail to prove a dangerous, and perhaps disastrous complication. It would not, unless very large, necessarily present any serious *obstruction* to the passage of the head, but it could scarcely fail to result in serious injury to the soft parts intervening between the head of the child and the pelvic wall. As may readily be supposed, a stone will easily give rise to sloughing, and the subsequent formation of a vesico-vaginal fistula.

The following case, presented in rather minute detail, to evolve the circumstantial evidence upon which my argument is principally founded, will, I think, throw some light on the history of calculi found in the bladder, after the cure of vesico-vaginal fistula by plastic operation: —

A Large Alternating Calculus found in the Bladder, after the Cure of Vesico-vaginal Fistula by Operation.

POSTULATE. — Such calculi do not always result from the closing of the fistula, but more often exist in the bladder, though not detected, at the time of the operation. They probably antedate the fistula, and are instrumental in its production during the labor.

Mrs. R., a young white woman, aged about twenty-eight years, was referred to me by Dr. Johnson, of Thomson, for treatment of a vesico-vaginal fistula, which had occurred immediately after her first labor, eight months previous. Her labor was represented to have been protracted. She was pale, emaciated, and miserable. From long and constant distress she had contracted the habit of morphine-taking, and was suffering from its effects, in addition to the trouble with the fistula.

There was nothing unusual in the history of the fistula; a protracted labor was followed by considerable tumefaction, and difficult or obstructed micturition; then, shortly after, by a sudden gush of urine, and since that, by a never-ceasing involuntary flow, which had continued to the present time. Indeed, this is the almost invariable history of vesico-vaginal fistula supervening upon a difficult or protracted labor.

Examination showed a considerable opening in the vesico-vaginal septum, a little in front of the cervix uteri, probably somewhat anterior to the *bas fond* of the bladder. I readily introduced two fingers into the bladder through the fistula, and with Sims's speculum obtained a confirmation, scarcely needed, of the exact condition previously verified by the finger.

Assisted by Drs. Coleman, Geddings, Sterling, Robert C. Eve, and A. Sibley Campbell, I performed Sims's operation, applying some ten or a dozen silver sutures. The case was then confided to the care of Dr. Sibley Campbell, who frequently changed the sigmoid catheter up to the ninth day, when the sutures were removed. The self-retaining catheter was used for some time longer, when the patient was allowed to retain the urine for a few hours at a time, it being drawn off at intervals. The bladder, at first very much contracted, gradually became more tolerant of distention until it could retain water some eight or ten hours at a time.

Towards the close of the after-treatment, on introducing an ordinary silver catheter one day, Dr. Campbell was greatly surprised to encounter a stone of considerable size, not very far from the entrance of the bladder! A trouble-

some plastic operation had just been successfully performed, and the woman cured of a distressing malady ; and now a condition is discovered imperatively demanding the reproduction of the very conditions which we had taken such pains to cure ! It appeared to me inexplicable that we had not before encountered the stone, notwithstanding all the manipulation, probing, and exploring of the bladder previous to, during, and after the operation. In the after-treatment, a catheter had been introduced three or four times a day, for many days ; no grating or clicking had ever been perceived, and yet, now, at the very entrance of the bladder, this large calculus is found, which had never before been suspected. The patient was too much enervated, from confinement and suffering, to submit to lithotomy, and to what might be equivalent to a second operation for fistula. She was sent home, with the promise of further treatment after she had recovered her strength.

A letter from Dr. Johnson informing me that Mrs. R. was sufficiently recovered for lithotomy, also intimated that she desired there should be no delay in the operation, as " she now suffered greater distress from the stone than she had endured during the existence of the fistula." With the assistance of some of the gentlemen before mentioned, I performed vesico-vaginal lithotomy, as described by Dr. T. A. Emmet,[1] of New York.

An incision was made, upon a sound in the bladder, large enough to allow its passage through the vesico-vaginal wall, while the septum was steadied by a tenaculum. With the curved sound held in this opening, I divided the vesico-vaginal septum backwards in the median line for more than an inch, crossing the cicatrix of my former operation. A stone, as large as an English walnut, was readily removed by the forceps through the incision.

Two points are dwelt upon by Dr. Emmet as worthy of note. 1st, the perforation of the wall with the tenaculum or

[1] *Vesico-vaginal Fistula from Parturition, and other Causes, etc.* By Thomas Addis Emmet, M. D., Surgeon-in-chief of the New York State Woman's Hospital. New York, 1868, pp. 43, 190, 218.

the sound, to prevent sliding and displacement of the vesical and vaginal walls; and 2d, the use of scissors for the incision, — I preferred the knife, simply because more accustomed to its use.

Although Dr. Emmet rather questions the necessity of sutures, under these circumstances, I have used them both times that I have operated. In the second case some nine or ten silver sutures were applied, the sigmoid catheter used, and all the other methods of after-treatment pursued, as in the previous operation. After the removal of the sutures, the case required little or no attention, and Mrs. R. soon returned to her home well, and she has had no trouble with either stone or fistula since. Dr. Emmet is probably correct when he says that he has "always experienced the greatest difficulty in keeping the incision open where he wished to do so." There is certainly the greatest difference, as to facility in healing, between lithotomy incisions and the freshened callous edges of a fistula following parturition. A few words will close my remarks in regard to the origin and presence of the above calculus, and in regard to vesical calculi sometimes found, after the cure of vesico-vaginal fistula by operation. Dr. Emmet, whose method of lithotomy was adopted in this and one other case, and to which I give my highest approval, expresses his opinion very distinctly as to the date and origin of vesical calculi found in patients, after several of his operations for vesico-vaginal fistula. In speaking of a stone supposed "not to have been smaller than a hen's egg" found in the bladder of a patient, in April, 1866, who had been cured by operation on January 27, 1865, of a vesico-vaginal fistula, that followed delivery in August, 1864, he says, "On the introduction of a sound through the urethra a large stone was detected, on which the bladder was firmly contracted;" and he gives the following account of its etiology, date of origin, and genesis: "There was no nucleus, but its formation was the result of chronic cystitis, which originated from the long retention of urine during the last labor; and, at the time of closing the fistula, the disease, as was proved by the result, had not yet been en-

tirely removed. I directed that the bladder should be washed out several times a day with large injections of warm water, slightly acidulated by adding a few drops of nitric acid, as the most direct way of correcting the alkaline state of the urine, due to the condition of the bladder itself." After three months' treatment he "reluctantly closed the fistulous opening again," so fearful was he of the reproduction of the stone. "It remains to be seen," he concludes, "whether the opening was closed too soon, for, with a recurrence of the inflammation, the calculus will form anew." [1]

Thus, it will be seen from the above, that Dr. Emmet certainly regards these concretions as invariably originating subsequent to the fistula and consequent upon the operation that closed the opening. Whatever may be the grounds for such an opinion in regard to his own cases, I cannot admit such an explanation as pertaining to mine. It will be seen that Mrs. R.'s stone was a large, hard, and heavy concretion, which must have been many months — I believe many years — in forming. Indeed, I have no doubt that she was the subject of stone at the time of her labor and during the pregnancy, and therefore, of course, long previous to the occurrence of the fistula. I will not deny that cystitis would tend to favor the modification of the urinary elements, both by its reflex influence upon the secretory function of the kidney, as well as by the products of fermentation that would be added to the constituents already collected in the bladder; but neither of these processes would account, to my mind, for the sudden appearance of so large a stone at so early a date after the closure of the fistula. If requested, then, to state the history of the stone in question, I would say, that the woman had probably been for some years the subject of ordinary vesical calculus.

At the time of labor, it is not impossible that the stone may have fallen between the descending head of the child and the pubis, so that the intervening vesico-vaginal septum, compressed and contused between the two hard sur-

[1] Op. cit., p. 44.

faces, was made to slough. Soon, the complete, sudden, and permanent evacuation of the bladder took place, by the formation of the fistula. The bladder became permanently contracted, and grasping the stone firmly, until, by closure of the fistula, distention of the bladder with urine was again possible. The stone was then released, and allowed to roll towards the neck of the bladder, where it was encountered by the catheter. It will be further seen that it is impossible in any other way to account for its sudden appearance, as the entire time, from the closure of the bladder by operation, to the detection of the stone, could not have exceeded three weeks. I have little doubt that the above is the true explanation of the presence of the calculus in the case now under consideration, and perhaps might serve equally well in accounting for many others that have been detected in the female bladder shortly after the closure of fistulæ, and the consequent redistention of the bladder.

Reasoning, then, from my own case, and from others in which calculi of considerable size have been found to exist in the bladder, shortly after closing of fistulæ by operation, I conclude, 1st, that in such cases the stone exists previous to the fistula, — perhaps *causing* the slough during the labor in which it occurs ; 2d, that, like the present stone, they are grasped by the empty bladder and remain imbedded during the entire period of the existence of the fistula ; 3d, that when the fistula has been closed by operation, and the collection of urine in the bladder becomes again possible, the consequent distention releases the stone ; the calculus is not, therefore, in process of formation in the bladder at that time, but is only *discovered* after the cure of the fistula.

I would further add, in support of the above view, that the non-existence of such a pocketed stone cannot be inferred, from its not having been felt during the daily passage of the catheter, in the after-treatment of the fistula, — for, so long as the catheter is used for the purpose of keeping the bladder empty and preventing distention, the stone is never unpocketed.

The bladder is never allowed to distend until after the use

of the self-retaining catheter is discontinued. Unless the surgeon should pursue the plan of catheterizing the patient after the bladder has been distended, he would not be apt to detect the stone, even after distention had released it. The patient is generally discharged before any suspicion of the existence of any mechanical cause of irritation in the bladder is awakened. It is only months after, that, by the continuance of vesical distress, the surgeon is led to the discovery of the calculus.

The two practical deductions from the above interpretation of my case of vesical calculus, found after fistula, are the following: First, that careful examination should be made for stone *previous to the closure of the fistula*, in all cases in which the known circumstances attending the occurrence of the accident do not exclude the possibility of its presence in the bladder; and secondly, that all patients should, previous to discharge, be subjected to careful sounding, after the cure of the fistula and distention of the bladder by urine, or by the injection of water